**Amendments to the Claims**

Please amend Claims 11, 23, 31, 41 and 44. The Claim Listing below will replace all prior versions of the claims in the application:

**Claim Listing**

1. (original) A data network comprising:

a core network of hybrid switch circuits interconnected by WDM optical fibers, optical data signals at a first dedicated wavelength from fibers being converted to electrical signals and switched through an electronic switch in the hybrid switch circuits and data signals at other wavelengths from the fiber being switched through an electronically controlled optical switch, each hybrid switch circuit monitoring traffic through the electronic switch to initiate communication among upstream and downstream circuits to establish flow paths through the optical switches of multiple hybrid switch circuits of the core network; and

peripheral electronic switches converting electrical signals to WDM signals transmitted over fibers to the hybrid switch circuits, the peripheral electronic switches responding to communication from the core network to forward data over the established flow paths.

2. (original) A data network as described in claim 1 wherein the upstream and downstream circuits include other switch circuits.

3. (original) A data network as described in claim 1 wherein the upstream and downstream circuits include other hybrid switch circuits.

4. (original) A data network as in claim 1 wherein optical data signals on the first dedicated wavelength are converted to electronic signals which are monitored therein by an electronic controller, the electronic controller re-transmitting at least part of the received optical data signals to other hybrid switch circuits.

5. (original) A data network as in claim 4 wherein the electronic controller additionally creates and transmits messages to other hybrid switch circuits and peripheral nodes on the core network over the first dedicated wavelength.

6. (original) A data network as in claim 1 wherein data at a peripheral node bound for other peripheral nodes on the core network is aggregated and converted to WDM optical signals for transmission over fibers to the hybrid switch circuits in the core network, the peripheral node including an electronic controller that responds to communication from the core network to forward data over the established flow paths.

7. (original) A data network as in claim 6 wherein a peripheral node aggregating data traffic bound for other nodes on the core network transmits a message to a hybrid switch circuit in the core network indicating a need to establish a flow path for optical routing of data to a destination node.

8. (original) A data network as in claim 1 wherein the data transmitted among hybrid switch circuits includes tags indicating virtual circuits and the hybrid switch circuits monitor traffic on individual virtual circuits to initiate flow paths.

9. (original) A data network as in claim 1 wherein an electronic controller monitors traffic on a plurality of dedicated wavelengths to establish flow paths for optical routing of signals.

10. (original) A data network as in claim 1 wherein communication among hybrid switch circuits includes an MPLS protocol.

11. (currently amended) A data network as in claim 1 wherein communication among the hybrid switch circuits and peripheral ~~nodes~~ electronic switches is through an electrical link.

12. (original) A data network as in claim 1 wherein a peripheral node includes memory and a microprocessor to aggregate traffic from a regional network destined for other peripheral nodes on the core network.

13. (original) A data network as in claim 1 wherein a hybrid switch circuit in the core network is linked to a plurality of peripheral nodes on the core network.

14. (original) A data network as in claim 1 wherein data transmitted among hybrid switch circuits on the first dedicated wavelength is monitored by at least one high speed microprocessor.

15. (original) A data network as in claim 1 wherein the optical switch in a hybrid switch circuit includes a network of optical multiplexors and de-multiplexors controlled by electrical signals for routing an optical signal at a given wavelength.

16. (original) A data network as in claim 1 wherein low volume data traffic between nodes on the periphery of the core network are transferred over the first dedicated wavelength.

17. (original) A data network as in claim 16 wherein data traffic between peripheral nodes on the core network are transferred over established flow paths using assigned wavelengths when a bottleneck occurs or is anticipated on the first dedicated wavelength.

18. (original) A data network as in claim 1 wherein routing intelligence for establishing flow paths is distributed throughout the hybrid switch circuits in the core network.

19. (original) A data network as in claim 1 wherein routing intelligence for establishing flow paths is performed, at least in part, at a central location.

20. (original) A data network as in claim 1 wherein a hybrid switch circuit includes a splitter for enabling a simultaneous flow of an optical data signal to more than one destination.

21. (original) A data network as in claim 20 wherein selected output signals from the optical switch are fed into an optical splitter, outputs of the optical splitter are further routed through the optical switch enabling a simultaneous flow of an optical data signal to more than one destination.

22. (original) A data network as in claim 1 wherein the hybrid switch circuits support bi-directional data flow on optical fibers interconnecting the hybrid switch circuits.

23. (currently amended) A data network as in claim 1 wherein the hybrid switch ~~circuit~~ circuits in the core network learn a topology of the core network and associated interconnections by communicating with other hybrid switch circuits.

24. (original) A data network as in claim 1 wherein data is transferred on an established flow path in the core network where it is processed by a hybrid switch circuit that further transmits the data over the first dedicated wavelength.

25. (original) A data network as in claim 1 wherein data transmitted over the first dedicated wavelength among hybrid switch circuits in the core network is processed by a hybrid switch circuit in the core network that further transmits the data over an established flow path.

26. (original) A data network as in claim 1 wherein an established flow path supporting a data transfer is re-mapped when a failure is detected within the core network.

27. (original) A data network as in claim 1 wherein the hybrid switch circuits in the core network monitor received data to detect network failures.

28. (original) A data network as in claim 1 wherein test data packets are sent through the core network to detect failures.

29. (original) A data network as in claim 1 wherein flow paths are established based on detected network failures.

30. (original) A data network as in claim 1 wherein a backup path for an established flow path is computed to provide an alternate route if there is a network failure on the established flow path.

31. (currently amended) A method of communicating in a data network comprising the steps of:

interconnecting a core network of hybrid switch circuits using WDM optical fibers, wherein optical data signals at a first dedicated wavelength from fibers are converted to electrical signals and switched through an electronic switch in the hybrid switch circuits and data signals at other wavelengths from the fiber are switched through an electronically controlled optical switch;

monitoring traffic through the electronic switch in each hybrid switch circuit to initiate communication among upstream and downstream circuits to establish flow paths through the optical switches of multiple hybrid switch circuits of the core network; and

converting electrical signals at peripheral switches to WDM signals which are transmitted over fibers to the hybrid switch circuits, the peripheral ~~electronic~~ switches responding to communication from the core network to forward data over the established flow paths.

32. (original) A method as in claim 31 wherein the upstream and downstream circuits include other switch circuits.

33. (original) A method as in claim 31 wherein the upstream and downstream circuits include other hybrid switch circuits.

34. (original) A method as in claim 31 wherein optical data signals on the first dedicated wavelength are converted to electronic signals which are monitored therein by an

electronic controller, the electronic controller re-transmitting at least part of the received optical data signals to other hybrid switch circuits.

35. (original) A method as in claim 34 wherein the electronic controller additionally creates and transmits messages to other hybrid switch circuits and peripheral nodes on the core network over the first dedicated wavelength.

36. (original) A method as in claim 31 wherein data at a peripheral node bound for other peripheral nodes on the core network is aggregated and converted to WDM optical signals for transmission over fibers to the hybrid switch circuits in the core network, the peripheral node including an electronic controller that responds to communication from the core network to forward data over the established flow paths.

37. (original) A method as in claim 36 wherein a peripheral node aggregating data traffic bound for other nodes on the core network transmits a message to a hybrid switch circuit in the core network indicating a need to establish a flow path for optical routing of data to a destination node.

38. (original) A method as in claim 31 wherein the data transmitted among hybrid switch circuits includes tags indicating virtual circuits and the hybrid switch circuits monitor traffic on individual virtual circuits to initiate flow paths.

39. (original) A method as in claim 31 wherein an electronic controller monitors traffic on a plurality of dedicated wavelengths to establish flow paths for optical routing of signals.

40. (original) A method as in claim 31 wherein communication among hybrid switch circuits includes an MPLS protocol.

41. (currently amended) A method as in claim 31 wherein communication among the hybrid switch circuits and peripheral ~~nodes~~ switches is through an electrical link.

42. (original) A method as in claim 31 wherein a peripheral node includes memory and a microprocessor to aggregate traffic from a regional network destined for other peripheral nodes on the core network.

43. (original) A method as in claim 31 wherein a hybrid switch circuit in the core network is linked to a plurality of peripheral nodes on the core network.

44. (currently amended) A method as in claim 31 wherein data transmitted among hybrid switch ~~circuit~~ circuits on the first dedicated wavelength is monitored by at least one high speed microprocessor.

45. (original) A method as in claim 31 wherein the optical switch in a hybrid switch circuit includes a network of optical multiplexors and de-multiplexors controlled by electrical signals for routing an optical signal at a given wavelength.

46. (original) A method as in claim 31 wherein low volume data traffic between nodes on the periphery of the core network are transferred over the first dedicated wavelength.

47. (original) A method as in claim 46 wherein data traffic between peripheral nodes on the core network are transferred over established flow paths using assigned wavelengths when a bottleneck occurs or is anticipated on the first dedicated wavelength.

48. (original) A method as in claim 31 wherein routing intelligence for establishing flow paths is distributed throughout the hybrid switch circuits in the core network.

49. (original) A method as in claim 31 wherein routing intelligence for establishing flow paths is performed, at least in part, at a central location.

50. (original) A method as in claim 31 wherein a hybrid switch circuit includes a splitter for enabling a simultaneous flow of an optical data signal to more than one destination.

51. (original) A method as in claim 50 wherein selected output signals from the optical switch are fed into an optical splitter, outputs of the optical splitter are further routed through the optical switch enabling a simultaneous flow of an optical data signal to more than one destination.

52. (original) A method as in claim 31 wherein the hybrid switch circuits support bi-directional data flow on optical fibers interconnecting the hybrid switch circuits.

53. (original) A method as in claim 31 wherein the hybrid switch circuits in the core network learn a topology of the core network and associated interconnections by communicating with other hybrid switch circuits.

54. (original) A method as in claim 31 wherein data is transferred on an established flow path in the core network where it is processed by a hybrid switch circuit that further transmits the data over the first dedicated wavelength.

55. (original) A method as in claim 31 wherein data transmitted over the first dedicated wavelength among hybrid switch circuits in the core network is processed by a hybrid switch circuit in the core network that further transmits the data over an established flow path.

56. (original) A method as in claim 31 wherein an established flow path supporting a data transfer is re-mapped when a failure is detected within the core network.

57. (original) A method as in claim 31 wherein the hybrid switch circuits in the core network monitor received data to detect network failures.

58. (original) A method as in claim 31 wherein test data packets are sent through the core network to detect failures.

59. (original) A method as in claim 31 wherein flow paths are established based on detected network failures.

60. (original) A method as in claim 31 wherein a backup path for an established flow path is computed to provide an alternate route if there is a network failure on the established flow path.

61. (original) A data network comprising:

means for interconnecting a core network of hybrid switch circuits, wherein selected signals from interconnecting means are converted to electrical signals and switched through an electronic switch means and other data signals from the interconnecting means are switched through an optical switch means in a hybrid switch circuit;

means for monitoring traffic through the electronic switch means in each hybrid switch circuit to initiate communication among hybrid switch circuits and to establish flow paths through the optical switch means of multiple hybrid switch circuits of the core network; and

means for converting electrical signals at peripheral switch means to signals which are transmitted over interconnecting means to the hybrid switch circuits, the peripheral switch means responding to communication from the core network to forward data over the established flow paths.

62. (original) A data network as in claim 1 wherein a flow path is established depending on a level of Multi-Protocol Label Switching traffic through the hybrid switch circuits.

63. (original) A data network as in claim 1 further comprising:

a regenerator for regenerating a wavelength division multiplex signal in an established flow path.

64. (original) A data network as in claim 1 further comprising:

a wavelength converter disposed in an established optical flow path for converting a wavelength division multiplex signal to a different wavelength.

65. (original) A data network as in claim 1 wherein diagnostics distributed among the hybrid switches support continuous testing of selected flow paths.

66. (original) A data network as in claim 1 wherein certain flow paths are reserved for future use based on historical usage.

67. (original) A data network as in claim 1 wherein selected flow paths are reserved based on expected usage.

68. (original) A method of communicating in a data network as in claim 31 wherein flow paths are established depending on a level of Multi-Label Protocol Switching traffic through the hybrid switch circuits.

69. (original) A method of communicating in a data network as in claim 31 further comprising the step of:

regenerating a wavelength division multiplex signal in an established flow path.

70. (original) A method of communicating in a data network as in claim 31 further comprising the step of:

converting a wavelength division multiplex signal in an established optical flow path to a different wavelength.

71. (original) A method of communicating in a data network as in claim 31 further comprising the step of:

occasionally testing selected flow paths to assure their reliability.

72. (original) A method of communicating in a data network as in claim 31 further comprising the step of:

reserving flow paths for future use based on historical usage.

73. (original) A method of communicating in a data network as in claim 31 further comprising the step of:

reserving flow paths based on expected usage.

**Amendments to the Drawings**

In Figure 2A, reference numeral 202 has been underlined, per the Examiner's request.

Attachment: Replacement Sheet

Annotated Marked-Up Drawing